

Archaeological Survey

The Hills at Boerne Stage
Northern Bexar County, Texas

San Antonio, Texas 78258

February 28, 2008

FGS Control # FGS-E07416

Prepared exclusively for

Galo Properties
18618 Tuscany Stone, Suite 100

Frost GeoSciences

Geologic and Environmental Consulting

13402 Western Oak • Helotes, Texas 78023 • Phone: (210) 372-1315 • Fax: (210) 372-1318

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As a result, it must be noted that the information contained within this report cannot be made available to the general public and additional copies of this report and the attached maps are not permissible without the written consent of Frost GeoSciences, Inc. and Abasolo Archaeological Consultants.

Site Location

The project site is located north of Cielo Vista Drive and west of I.H. 10 in northern Bexar County, Texas. According to the information provided by Galo Properties the Site is located at N29° 39' 15.86" Latitude and W98° 39' 19.16" Longitude (WGS84). The project site is located in the Balcones Canyonlands region of northwest Bexar County. An overall view of the area is shown on a copy of the Site Plan, a local Street Map, a Topographic Map, a USDA Soils Map, as well as on a 2006 City of San Antonio Aerial Photograph. Copies of the above mentioned maps indicating the location of the project area are presented on Plates 1 through 5.

Geologic Map Review

The project site is located on the Upper member of the Glen Rose Limestone (Kgru), the Kainer Formation (Kk), the Walnut Formation (Kw) and some Quaternary Alluvium (Qal) according to the Geologic Map of the New Braunfels, Texas 30 X 60 Minute Quadrangle, revised 2000.

The Upper member of the Glen Rose Limestone is the lower confining unit for the Edwards Aquifer and consists of yellowish tan, thinly bedded limestone and marl. Stairstep topography results from alternating layers of limestone and marl. Surface cavern development can occur within this formation. Overall thickness ranges from 300 to 500 feet. Fossils of *Exogyra texana* are common. Some honeycomb porosity exists. Overall thickness ranges from 30 to 50 feet.

The Kainer formation is the lower unit of the Edwards Group and consists of limestone, dolomitic limestone, and dolomite. This unit is approximately 250 feet thick and thickens downdip toward the southeast. Grainstones and packstones are abundant in the upper part of the unit. In some places leached evaporitic strata and breccias are very distinct in the middle part of the unit. The lower part of the unit commonly comprises wackestones and packstones having local argillaceous intervals. Chert occurs throughout the unit in varying amounts and is typically abundant. Honeycomb porosity is common. Current laminations and low-angle cross-stratification are also present.

The Walnut Formation consists of limestone, marl, and dolomitic limestone. This formation is often referred to as the Nodular Member of the Edwards Kainer Limestone and is a lower confining unit of the Edwards Aquifer. Fossils of *Exogyra texana* are common. Some honeycomb porosity exists. Overall thickness ranges from 30 to 50 feet.

The Quaternary Alluvium consists of gravel, sand, silt, and clay. The gravel is predominantly limestone, dolostone, and chert. These low terrace deposits are mostly above the flood level along entrenched streams. The fluvial morphology is well preserved with point bars, oxbows, and abandoned channel segments.

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U.S.D.A. Soil Survey Review

The United States Department of Agricultural (USDA) Natural Resources Conservation Service (NRCS) maintains an on-line Web Soil Survey for Bexar County, Texas. According to the Web Soil Survey the project site is located on the Tarrant Association and the Brackett gravelly clay loam (12 to 20 percent slopes).

The Tarrant Association (TaD) consists of stony soils that are very shallow, dark colored, and gently undulating to steep. The Tarrant Association occurs on the limestone prairies in the northern third of the county. The surface layer is very dark grayish brown, calcareous clay loam and is about 10 inches thick. It has moderate, fine, subangular blocky structure. This layer is crumbly and friable when moist. Limestone fragments that range from a quarter of an inch to 24 inches in diameter cover about 35 percent of the surface. The subsurface layer, about 8 inches thick, is hard fractured limestone. The cracks and spaces are filled with dark grayish brown clay loam. The bedrock is hard limestone. Tarrant soils have rapid surface drainage and good internal drainage. The capacity to hold water is low. Natural fertility is high. Water erosion is a hazard.

The Brackett Gravelly Clay Loam is in hilly areas on uplands. Typically, this soil has a moderately alkaline, pale brown clay loam surface layer about 5 inches thick. The surface layer has a 15 percent cover of fragments of limestone, most of which are less than 4 inches in diameter, but a few are as much as 12 inches in diameter. The subsoil, to 16 inches, is moderately alkaline, pale yellow clay loam that has about 5 percent weakly cemented fine fragments of limestone and a few soft masses of calcium carbonate. The underlying layer is very pale brown interbedded calcareous loam and limestone. This soil is well drained. The available water capacity is very low. Runoff is rapid, and permeability is moderately slow.

A copy of the Aerial Photograph from the U.S.D.A. Soil Survey of Bexar County, Texas indicating the location of the project site and the soil types is included in this report on Plate 4 in Appendix A.

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Abstract

Abasolo Archaeological Consultants (AAC) conducted Phase I archaeological investigations that included a pedestrian survey of the high probability areas within the Hills of Boerne Stage Development in northern Bexar County, Texas. The project area included 123.76 acres slated for Phase I, 20.98 acres of Phase II, and 115.86 acres of Phase III. A lithic scatter associated with site 4IBX962 was recorded in the northern part of Phase I near the location of a seasonal spring. Site 4IBX962 is located across a seasonally spring-fed creek from the project site and will not be impacted by development activities at the Hills of Boerne Stage Development. One historic site, a stacked rock fence designated as site 4IBX1761, was documented on the project site. The rock fence transected portions of Phases I and III near the crest of a hill. Portions of the stone fence remain standing in good condition. Given the conditions observed during the field reconnaissance no further archaeological work is recommended for Phases I, II, or III of the Hills of Boerne Stage Development.

Introduction and Background

Abasolo Archaeological Consultants (AAC) conducted Phase I archaeological investigations that included a pedestrian survey of the high probability areas within the Hills of Boerne Stage Development in northern Bexar County, Texas. The project area included 123.76 acres slated for Phase I, 20.98 acres of Phase II, and 115.86 acres of Phase III (Plate 1). The field work was carried out to insure that no archaeological or historical resources eligible for nomination to the National Register of Historic Places are damaged or destroyed due to the planned construction. The survey was carried out by Dr. Harry Shafer, Ph.D. and Dr. Tom Hester, Ph.D. of Abasolo Archaeological Consultants, assisted by Brian Culver of Frost Geosciences in February 2008. The Hills of Boerne Stage Development lies within the Balcones Canyonlands region of northwest of San Antonio. The property is situated west of Interstate 10. High, cedar-covered hills, steep slopes, narrow canyons and minor tributaries are all characteristic of this part of Bexar County (see also Shafer and Hester 2007d). Runoff from the project site drains into tributaries of Leon Creek. Geologically the project area is dominated by Cretaceous age rocks of the

physiographic feature known as the Edwards Plateau. The terrain is dominated by Glen Rose limestone (Kk) and (Kw) (Fig. 1), with eroded hills of Comanche Peak and Edwards limestone completing the geologic sequence (Arnow 1959: Pl. 2). The soils derived from these rocks in the project area are typical of this part of the Balcones Canyonlands. Capping the hills (Plate 4) are Tarrant (TaD) soils on 15-30% slopes (Fig. 2). On the lower slopes the soils are Bracket (BrD; 5-12% slope), while Krum soils occur in the narrow creek bottoms (Taylor et al.1993).

Research Design

The initial research design called for a 100% pedestrian survey of the property. Once in the field however, this strategy was proven impractical due to the extremely dense ashe juniper (cedar) and steep slopes on the property (Fig. 3). At the time of the field reconnaissance, road construction had begun and these new roads provided access to much of the property (Fig. 4). The field strategy was altered to use the cleared roads as survey transects. The survey team walked the roads and used them for access. All areas that were considered "high probability areas for archaeological sites" such as the creek valleys near two seasonal springs were thoroughly covered. Upland benches and upland ridges were also thoroughly inspected. The steep slopes were sampled via newly cut roads, as well as existing ranch roads, and transects were made from these roads.

Archaeological Background

Regional Culture History

The broad outline of the archaeology of northern Bexar County is reviewed here. Major time periods and site types are briefly noted.

The Paleoindian period, 9,200 - 6,800 B.C., has distinctive chipped stone spear points which were used in hunting mammoth and other late Ice Age mammals early in the period. Other spear types appear with a shift to the hunting of bison, deer and other game after the Ice Age ended around 8,000 B.C. (Hester 1986). Known site types in northern Bexar County are campsites with flint-chipping debris

from stone-tool making and repair. One site of Clovis age (9,200 B.C.) was excavated near FM 1604 and Leon Creek (Collins et al. 2003). A later site, dating to around 7,500 B.C., was investigated on the grounds of St. Mary's Hall on Salado Creek (Hester 1986).

Sites of the following Archaic period are common in northern Bexar County. These peoples were hunters and gatherers, as in the earlier Paleoindian period, but lived in an environment very similar to those of modern times. Projectile points used to tip spears (often erroneously called "arrowheads") change in shape through time, from 6,800 B.C. to 500 A.D. (Turner and Hester 1993). Archaeologists use these forms to recognize more specific time frames within the Archaic (e.g., Early, Middle and Late Archaic). In northern Bexar County, the most distinctive Archaic site is the burned rock midden. These large accumulations of fire-cracked limestone result from the use of earth-oven cooking starting around 3,000 B.C. (Black et al. 1997 ; Nickels et al. 2000). Such features were part of larger campsites, with large amounts of flint debris from tool-making; sometimes, animal bone (dietary remains) and charcoal that can be used for radiocarbon dating. Other Archaic site types include lithic procurement areas (where flint cobbles have eroded out of the Edwards limestone and were processed), lithic scatters (lightly-used areas probably representing short-term hunting and gathering activities), and rarely, sinkhole burials (Archaic peoples often disposed of their dead by placing them in sinkholes and caverns; Bement 1994).

By 700 A.D., there began to be some changes in the hunter-gatherer life way. The Late Prehistoric is first seen with the introduction of the bow and arrow. The stone arrow points are very small (mistakenly called "bird points"), but could be used in the hunting game of any size. By 1,300 A.D., the economy emphasized buffalo-hunting. Most sites of this era include campsites, often in areas previously used by Archaic peoples, lithic scatters of this age; and the lithic procurement areas of earlier times continued to be used.

During the Historic period, the best known archaeological remains are those of ranch and farm houses of cut stone, dating from the 1840s through the 1880s. Stacked-stone fences also occur (Knott 2004). Such sites, including those without surviving structures, are recognized from 19th century pottery fragments and artifacts of glass and metal, etc. Later Historic houses and farmsteads, through the early 1900s, are also found.

Archaeological Sites in the Vicinity

There are but a handful of documented prehistoric and historic sites located in the region around the Hills of Boerne Stage Road. This reflects the lack of scientific research in the area, as it is clear that a variety of known site types are present.

Just beyond the northern limit of the Hills of Boerne Stage Development is site 41BX962, a burned rock midden with an associated large campsite deposit. It is located across a seasonally spring-fed creek from the project area. This site was found in the 1980s during the construction of a private road. Local relic-collectors dug large holes in the site, damaging or destroying most of it. Avocational archaeologists recorded it in 1990, and published data that indicates that it was occupied during the Archaic and Late Prehistoric times (McReynolds and Gruenwald 1990). Examples of Late Archaic and Late Prehistoric diagnostic artifacts from 41BX962 are illustrated in Figures 8 and 9 of this report.

Prehistoric sites are equally few in the project area. To the north, on the north side of Leon Creek, is 41BX1721, a small burned rock midden recorded by Shafer and Hester (2007a) in the River Rock Development. A cluster of sites are located to the northwest, also along Leon Creek and recorded during a late 1960s-early 1970s survey of that drainage by Paul McGuff and Bill Fawcett (TASA). These include burned rock middens, lithic scatters and campsites dating to the Archaic and Late Prehistoric periods. Finally, located to the southeast are a cluster of small sites, mostly lithic scatters, within the boundaries of Friedrich Park (TASA).

A review of site data available from the Texas Archeological Site Atlas (TASA; Texas Historical Commission) provides records of several Historic-era sites, such as 41BX557, near I.H. 10 (a 1940s-1950s homestead) and 41BX497 and 41BX498 (19th century sites and cemeteries within the Maverick-Altgelt Ranch National Register District located to the southeast).

Survey Findings

Much of the Hills of Boerne Stage property consists of a high hill that is a remnant of the Edwards Plateau created by erosion over millions of years along the edge of the Balcones Escarpment. This erosion created numerous small canyons, some of which were deep enough to expose the aquifer resulting in numerous springs in the area. Two such springs occur in proximity of the project property but not within it and now flow only seasonally, if at all. Springs in the Balcones Canyonlands attracted prehistoric groups and are considered high probability areas for archaeological sites that consist of concentrated cultural refuse indicative of campsite or special activity areas that were repeatedly visited. Hill tops and slopes, however, are regarded as low probability areas for prehistoric archaeological sites. However these areas often contain historic sites or features created by 19th century ranching activities. These expectations were indeed fulfilled at the Hills of Boerne Stage development.

No prehistoric sites were found on the project site. The survey party did note a thin scatter of chipped stone and fire-cracked rock across the spring-fed creek from 4IBX962, a large burned rock midden and campsite previously investigated by members of the Southern Texas Archaeological Association (McReynolds and Gruenwald 1981; see above). Since this large site is in close proximity to the project site, and the lithic scatter observed is indirectly associated, more discussion of the site is provided below. No other prehistoric sites or lithic scatter was noted on the project site. The survey party did record one historic feature, a stacked stone fence. This feature is described below and was given a formal site designation.

Archaeological Site 4IBX1761

A single archaeological site, HBS-1 (4IBX1761), which consists of a stacked stone fence was recorded during the course of the survey. This stone fence (Figs. 5 and 6) extended from the western property boundary of the project area and extended eastward for perhaps 500 meters. The fence and the vegetation indicating the fence route can be seen in aerial photography.

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The fence is approximately 1.2 to 1.3 meters high, though it is not as tall in many places along its route, due to slumping and disturbance. Much of the fence appears to have been two courses wide, and smaller stones capped with larger ones spanned both courses. The width of the fence varies from 40 to 50 cm. Overall, the fence is comprised mainly of stones approximately 20 to 30 cm in length, with some large rectangular (not shaped) limestone blocks 50 to 60 cm long. At its western end, the fence is at its highest elevation above sea level, approximately 1,460 feet, while at its east end it is at approximately 1,350 feet (ASL)

Based on data published by Laura Knott (2004, 2005) and from our own research involving a stacked stone wall at the Regal Hills Development in northern San Antonio (Shafer and Hester 2006), we suspect that the wall dates to the middle part of the 19th century, perhaps within the span between 1850 and 1870. Barbed wire became commercially available after 1878 in the Bexar County region.

Dry-laid stacked stone fences, sometimes called "German fences," are found across central Texas. These fences are actually of English origin and spread by settlers from the South coming into Texas. Many of these have been lost to urban expansion and housing development, especially in northern Bexar County (cf. Shafer and Hester 2006). At the Sundance Ranch Development (Shafer and Hester 2007b), a well preserved and extensive stacked stone wall is capped by stones set on edge at a 60 degree angle (Shafer and Hester 2007b:Fig. 21). These walls were part of the old Hausmann-Heidemann ranch complex, and were likely built between 1857 and the mid-1870s (ibid.:5). The Hausmann-Heidemann walls were much better made than the one at 41BX1761, as it is more similar to the remnants of the Regal Hills stacked stone fence.

Cox (2008) notes that stacked stone fences were built, when one man was doing the work, at the rate of three feet per day, a figure that includes gathering and hauling suitable limestone rocks, and then sorting and stacking them.

Summary and Recommendations

A pedestrian survey of Phases I through III at the Hills of Boerne Stage Development recorded one archaeological site, a stacked stone fence that likely dates to the mid 19th century. The site is designated as 4IBX1761. This fence extended approximately 500 meters east to west along the crest of a hill in the Phase I unit. The fence will be directly impacted by the development and therefore has been given a state trinomial number, digitally imaged, and recorded in order to document its presence. Since it lies within the boundary of planned road and housing construction, we do not recommend preserving the fence in its entirety. However, developers are encouraged to preserve and stabilize a section of the fence, perhaps 50 meters, where it is still essentially intact at its western end, just east of the property boundary (Fig. 7).

The only other trace archaeological material noted on the project site was a very light scatter of chipped stone and fire-cracked rock found located across the creek from 4IBX962. We regard this light scatter of prehistoric material, there is no depth to the lithic scatter, as a part of 4IBX962 and have not considered it for a separate trinomial number.

In summary, the majority of the Hills of Boerne Stage Development consists of hill slope and hill top topography. Proximity to two springs, that originated from the Edwards Aquifer, provided that only small areas of the property were considered high probability areas for prehistoric archaeological sites. No prehistoric sites were found on the project site. The one site recorded is a historic stacked stone fence that probably dates to the middle of the 19th century prior to the introduction of barbed wire (after 1878 in the San Antonio area). This fence was recorded and given a formal site number (4IBX1761). It is encouraged that developers retain a portion of the historic stacked stone wall. No further archaeological work is recommended for Phases I, II, and III of the Hills of Boerne Stage Development.

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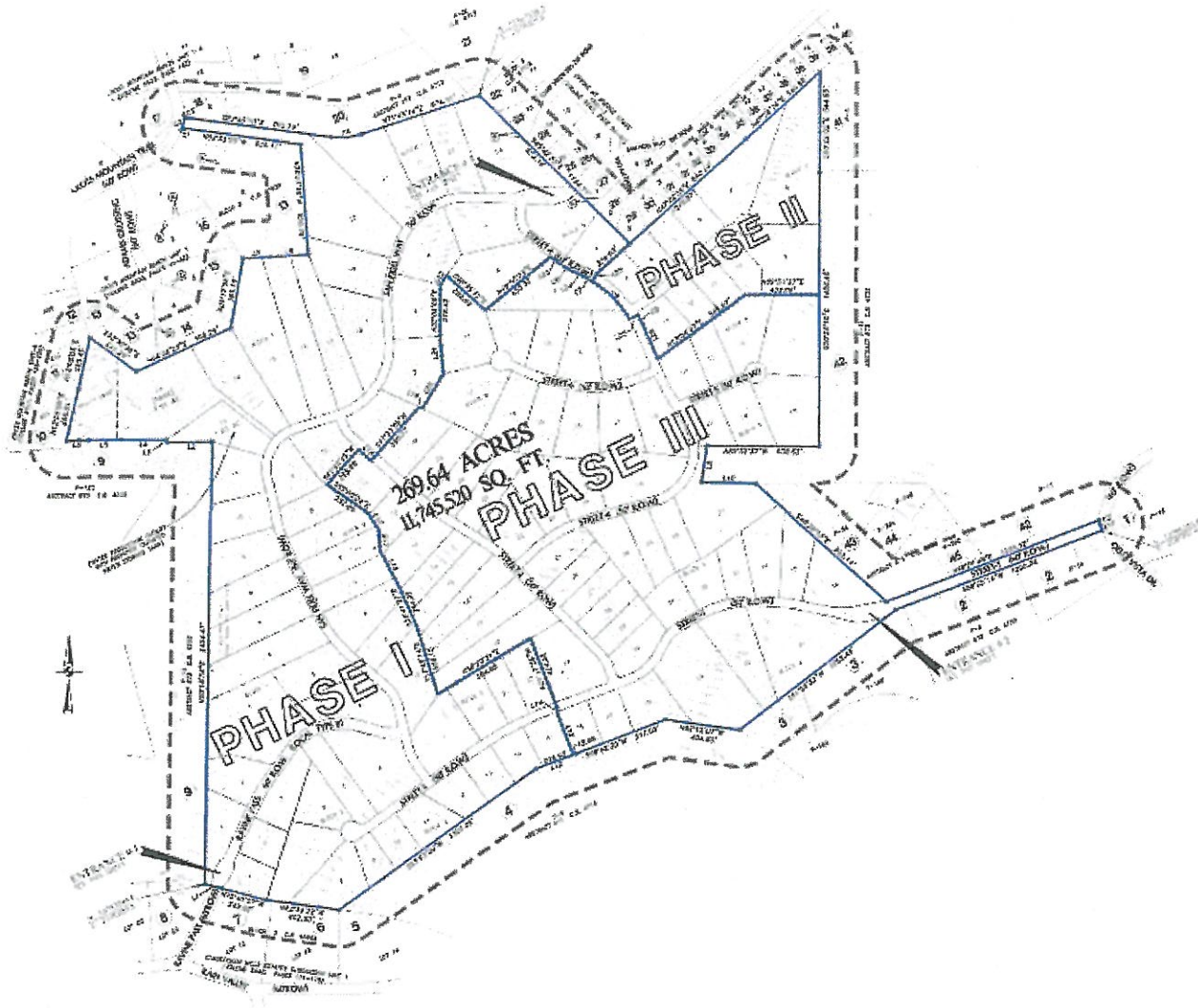
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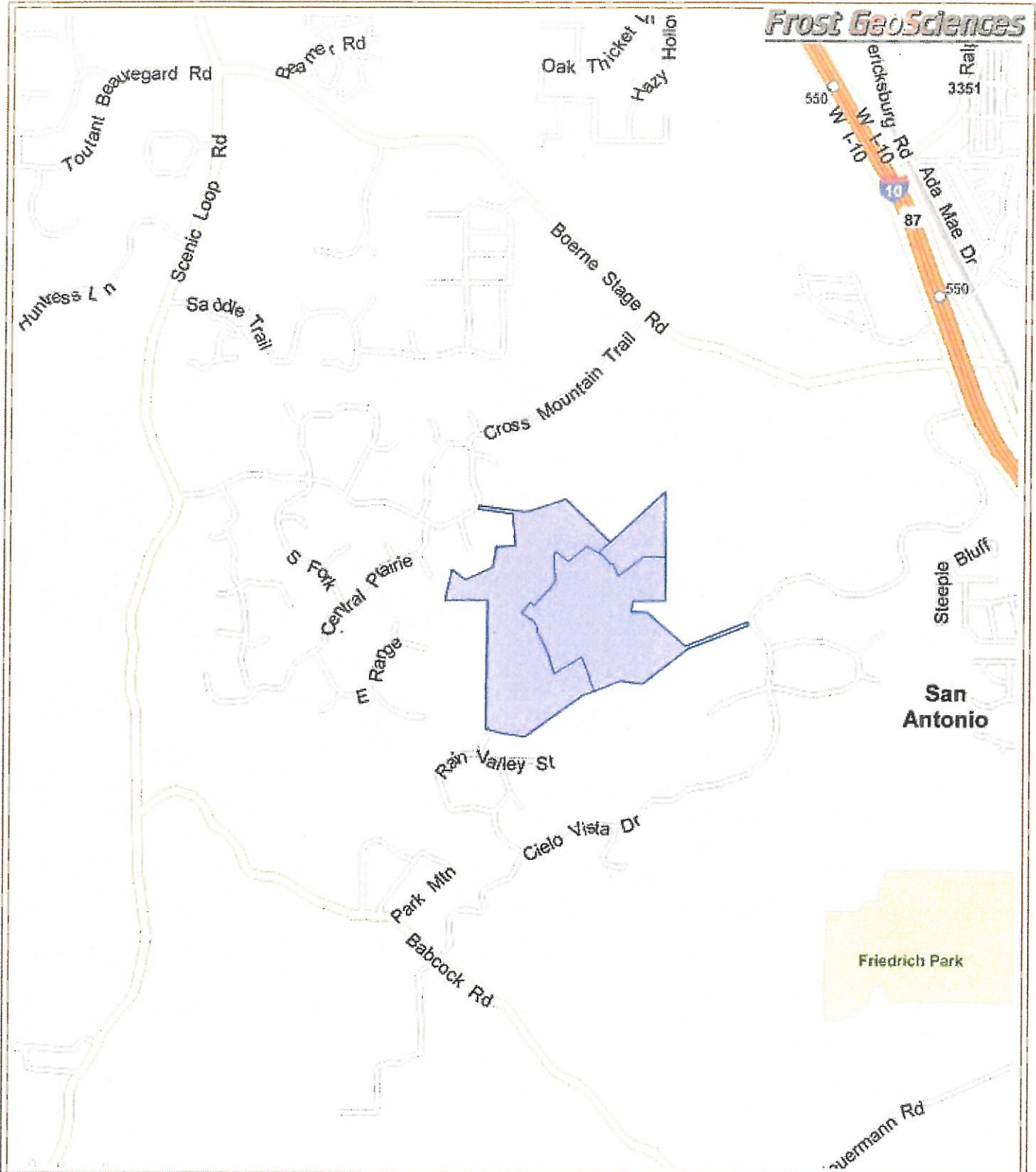
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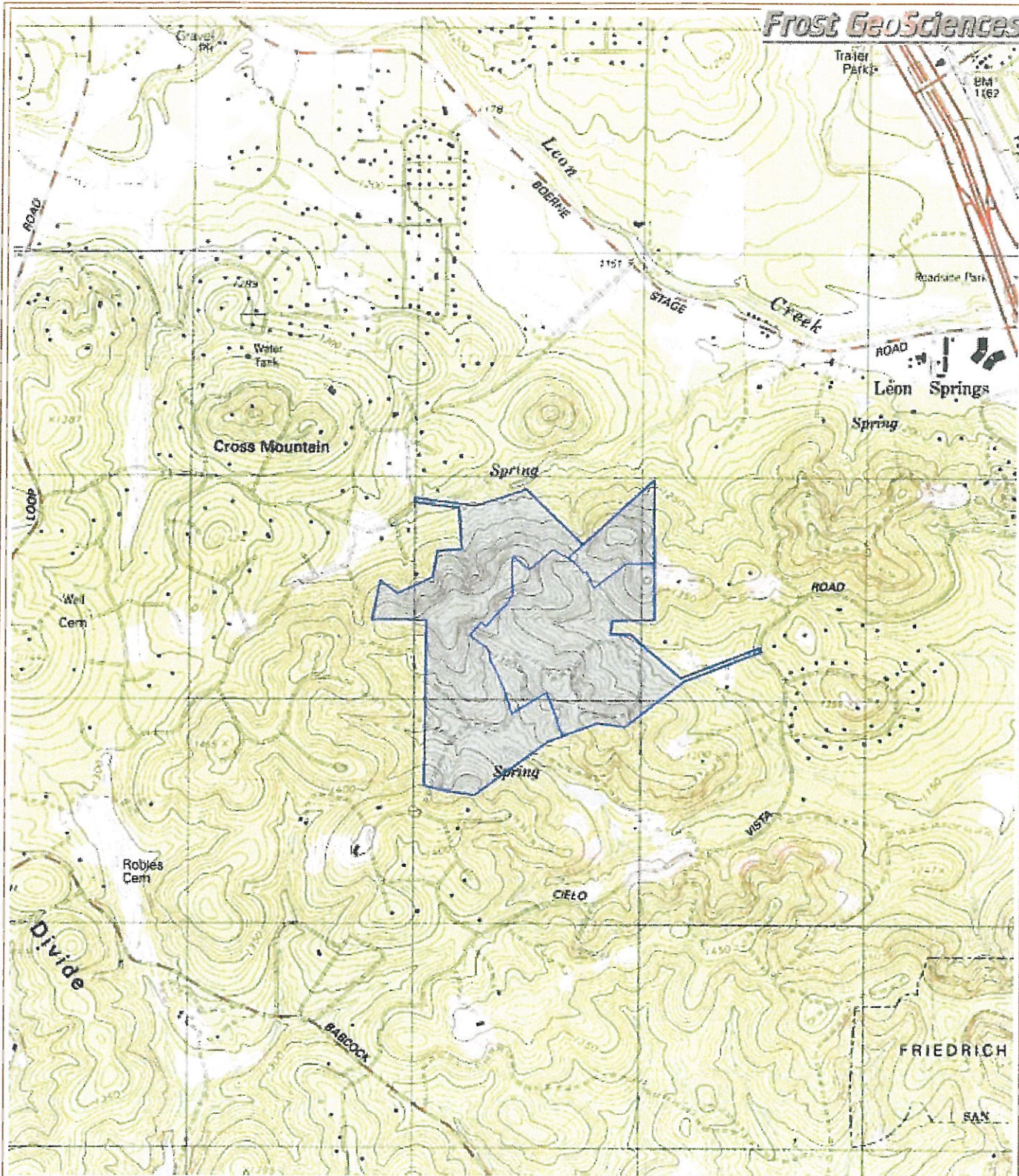
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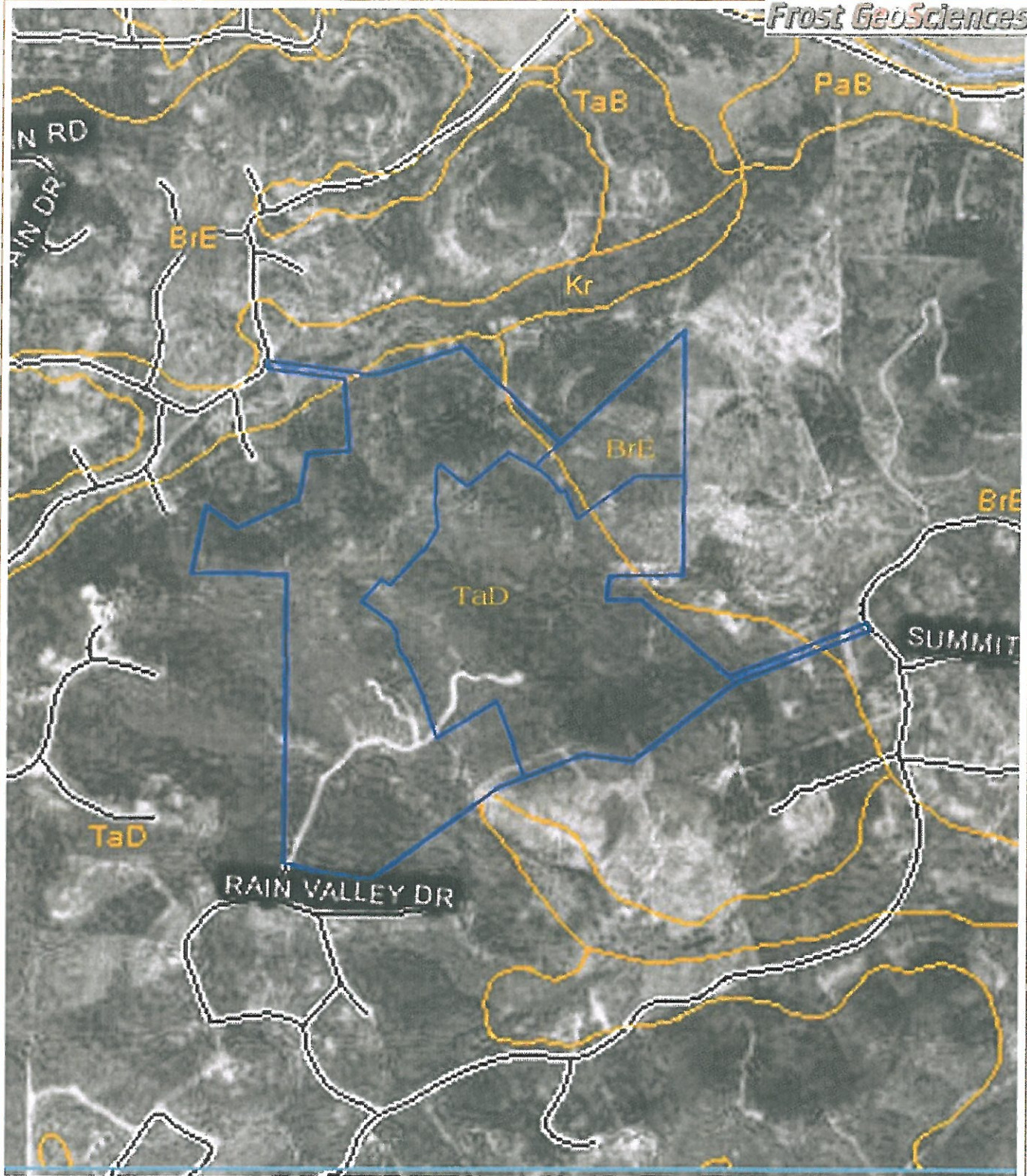
U.S.G.S. 7.5 Minute Quadrangle Map
San Antonio Sheet (1984)

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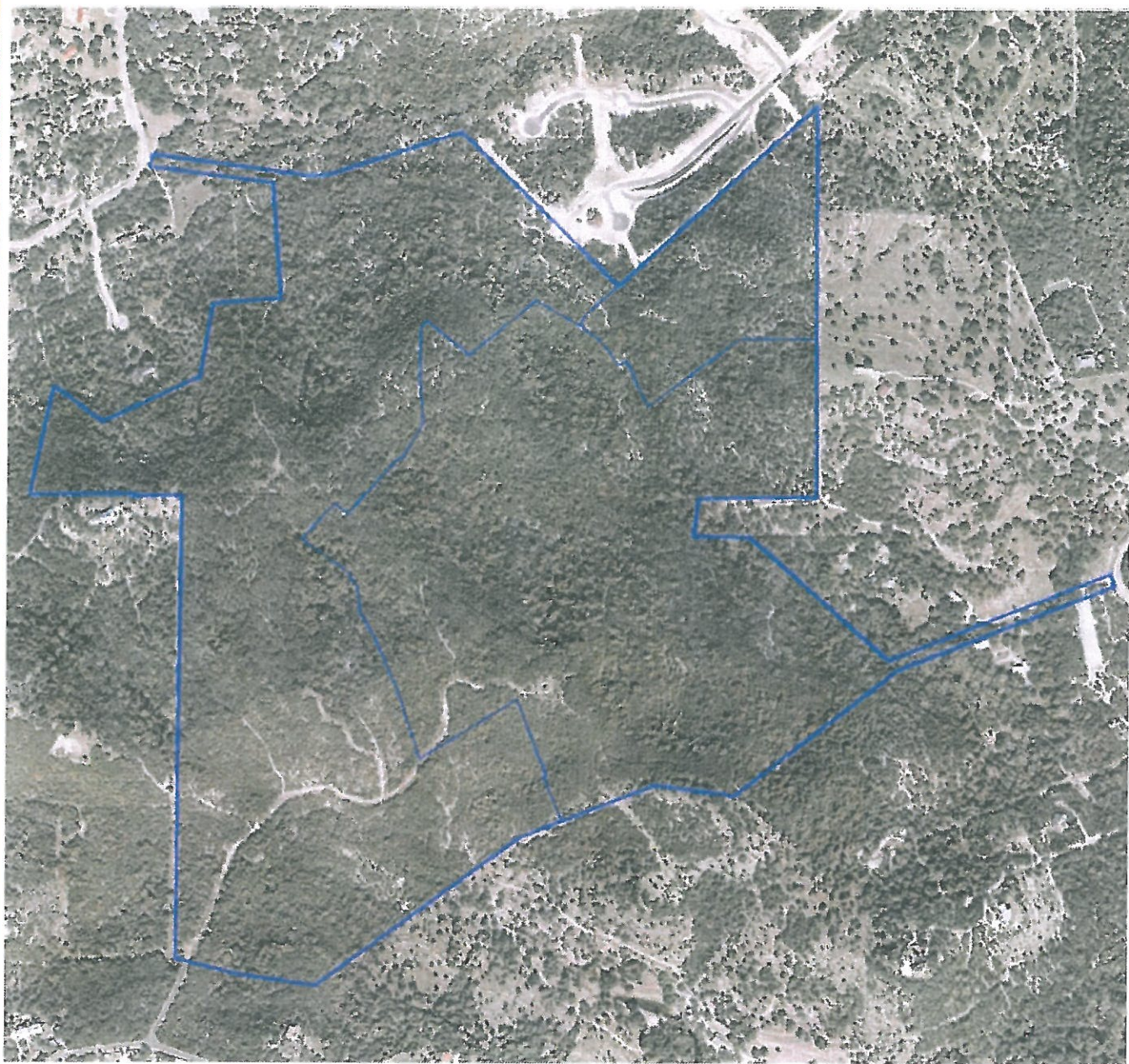
United States Department of Agriculture
Soil Survey Map - Bexar County, Texas

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2006 Aerial Photograph
City of San Antonio

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Figures

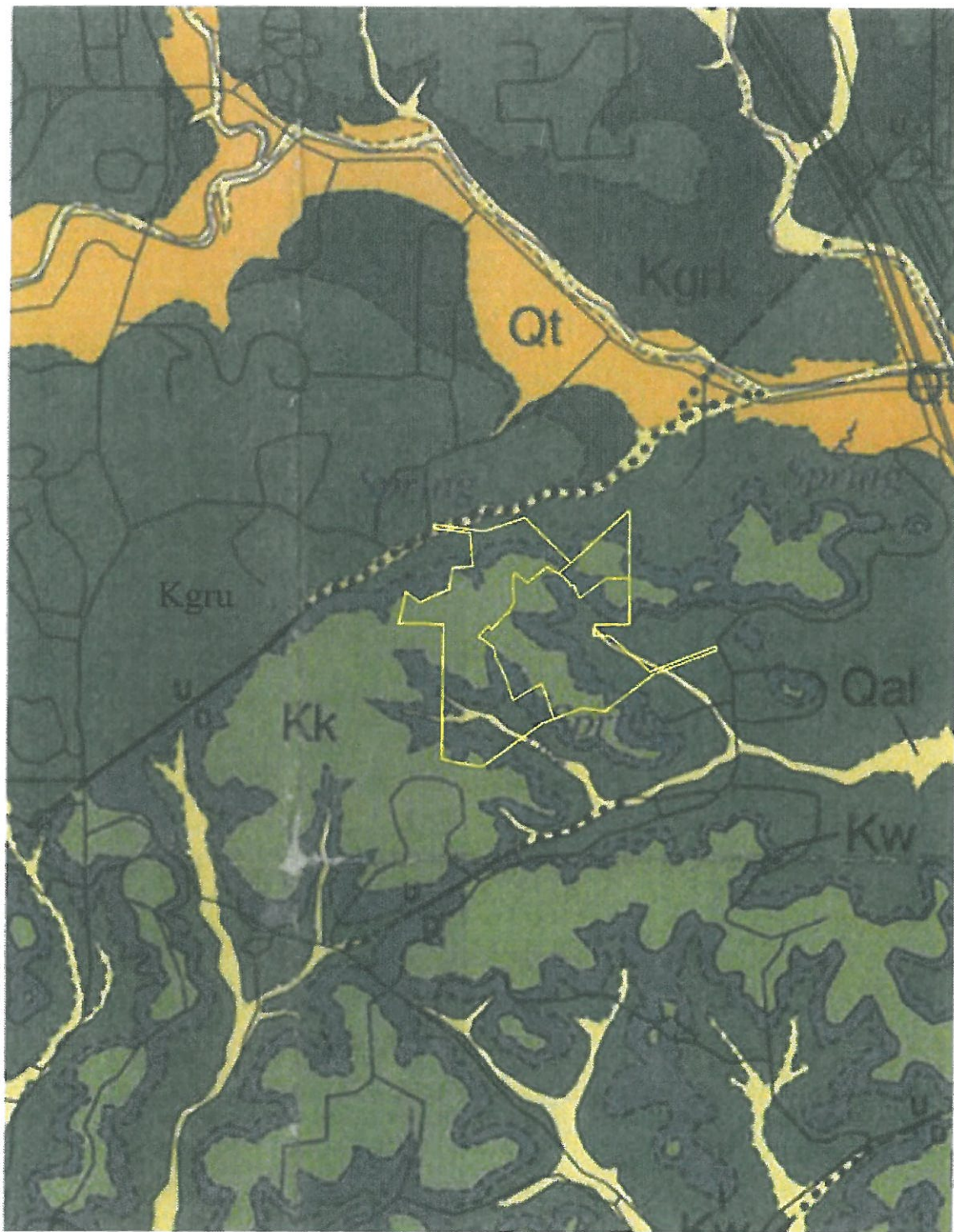


Figure 1. Geologic Map of the New Braunfels 30x60 Minute Quadrangle (2000), project area highlighted in yellow



Figure 2. Typical Tarrant soil profile at a hill crest at the Hills of Boerne Stage Development.



Figure 3. Hillcrest view of the Balcones Canyonlands in north San Antonio from the Hills of Boerne Stage development; note dense ashe juniper growth.



Figure 4. Road cut transect that provided access to much of the property.



Figure 5. Stacked rock fence designated as 41BX1761.

IMAGE RESTRICTED

A

IMAGE RESTRICTED

B

Figure 6. A, view of stacked rock fence (41BX1761); B, close-up perspective of the stacked rock fence.



IMAGE RESTRICTED

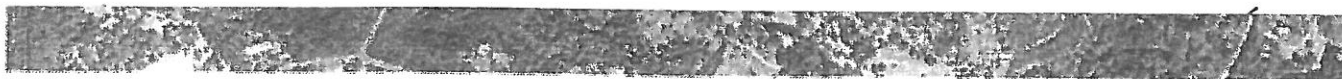


Figure 7. Aerial view showing the location of the stacked rock fence, 41BX1761, in construction phases I and III.

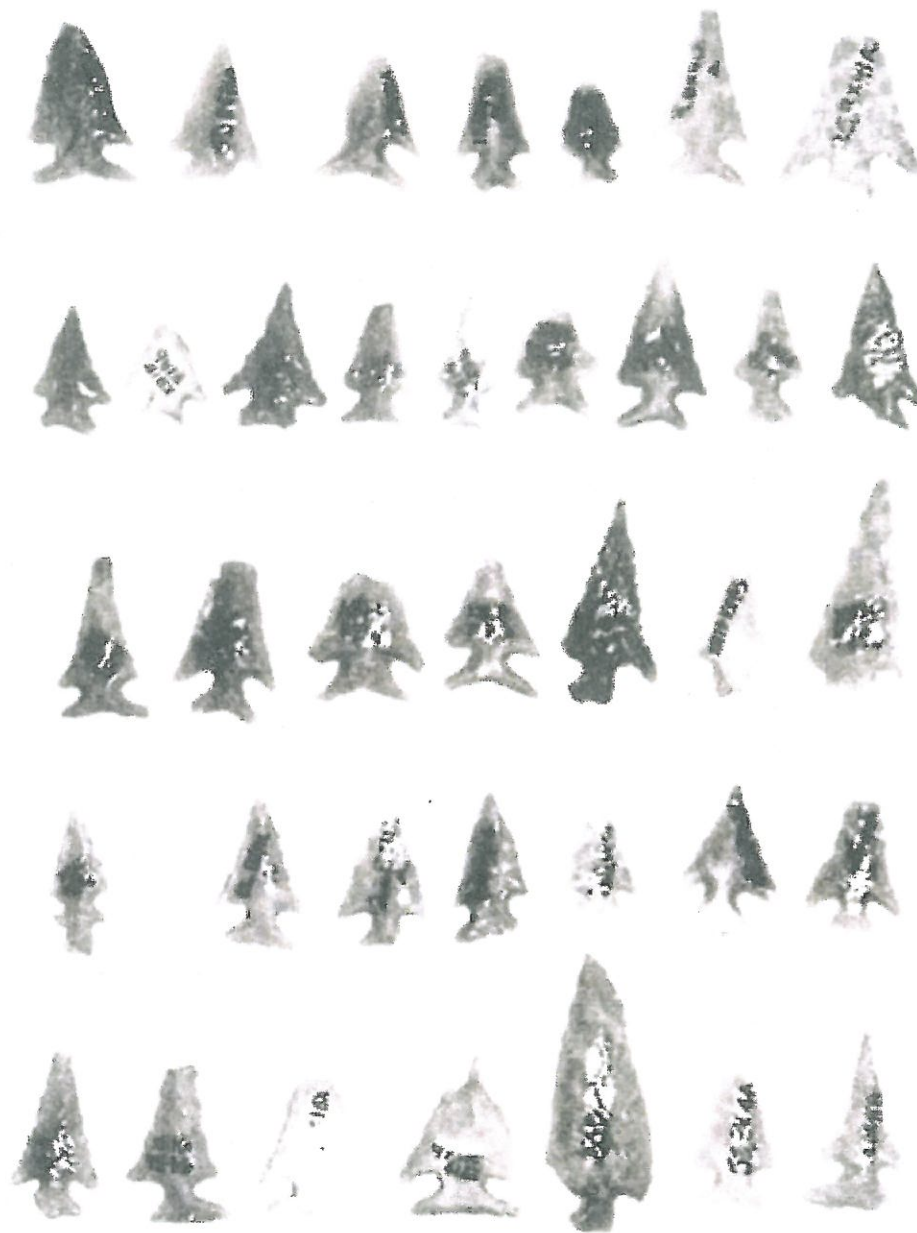


Figure 9. Late Prehistoric arrow points that date ca. AD 800-1300 from 41BX962 (from MacRaynolds and Grunewald 1981: Figure 3).

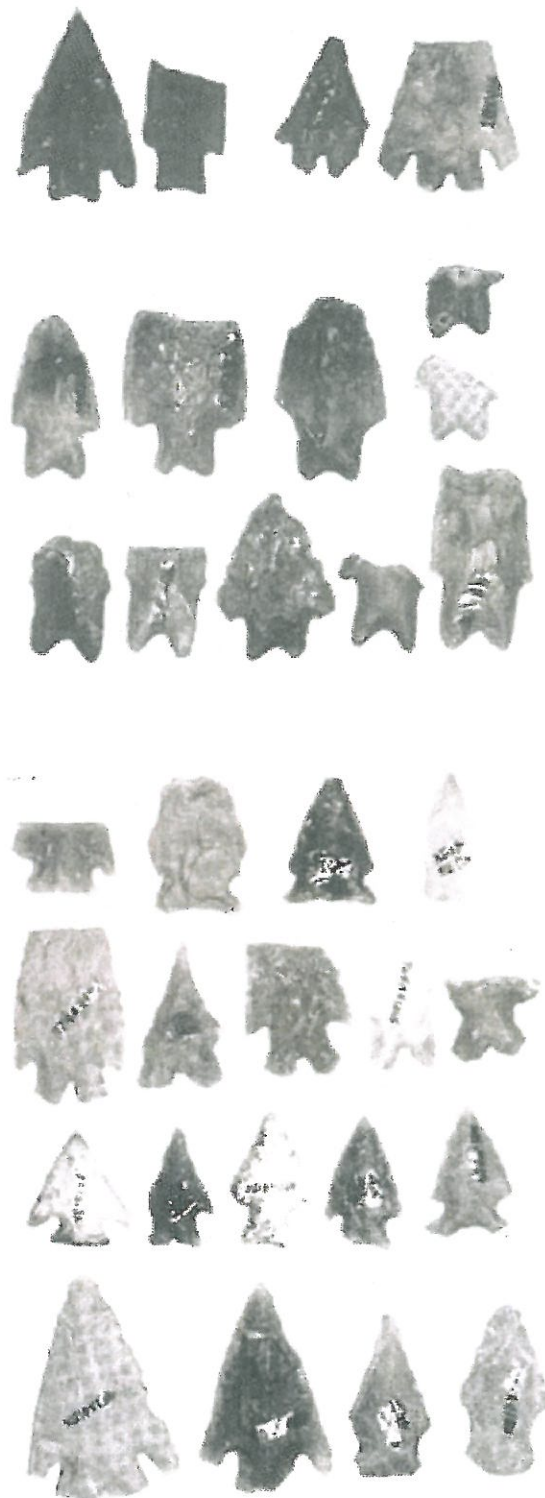


Figure 8. Late Archaic style projectile points from 41BX962 that date from ca. 1500 BC to AD 700 (from McRaynolds and Grunewald 1981: Figures. 1 and 2).